081476 - Huntington Harbor Dredging

Contributed by Alex Hernandez
Monday, 18 September 2006

Study Area: The study area includes the Anaheim Bay – Huntington Harbour complex within the City limits of Seal Beach and Huntington Beach in Orange County, California as shown in the picture above. The study area boundaries are defined as follows: starting from Seal Beach Boulevard to the Northwest of Huntington Harbour including portions of Anaheim Bay, Seal Beach National Wildlife Refuge, and Sunset Beach, from Huntington Harbour North to Edinger Avenue including portions of the U.S. Naval Weapons Station; East to Bolsa Chica Street, Southeast to the East Garden Grove Wintersburg Channel including the Bolsa Chica Ecological Reserve corridor that feeds into Huntington Harbour; and Southwest to Sunset Beach as shown in the picture below.

Purpose: The study authorities for the Huntington Harbor Study include Section 208 of the 1965 Flood Control Act and U.S. House of Representative, Committee on Transportation and Infrastructure, Resolution Docket 2584 Adopted October 9, 1998. This study encompasses the Huntington Harbour channels. Huntington Harbour is a recreational harbor located adjacent to Seal Beach, between Anaheim Bay and Huntington Beach. The main transit corridor for recreational boats utilizing Huntington Harbour is shared with U.S. Naval vessels at the Naval Weapons Station, Seal Beach.

The Huntington Harbor Study is investigating the need for a second entrance channel to Anaheim Bay to provide uninterrupted recreational boat access to Huntington Harbor, stabilize the shoreline at Surfside Colony to reduce storm damages, increase the tidal prism to improve the aquatic ecosystem within the Wildlife Refuge and Huntington Harbor, and to provide added force protection for the Naval Weapons Station’s mooring areas by diverting private and commercial maritime traffic away from the Station’ ship basin.

The purpose of the reconnaissance phase study is to determine if there is a Federal (Corps) interest in participating in a cost shared feasibility phase study. In regard to the Senate Report language, initial meetings with the local sponsor indicated interests in addition to ecosystem restoration. Therefore, this 905(b) addresses all water resource related concerns expressed by the local sponsor with respect to Huntington Harbour.

Accordingly, this 905(b) report investigated a multiple purpose project to improve navigation access to and within Huntington Harbour, navigation safety and security to the Seal Beach Naval Weapons Station, and restoration of the surrounding ecosystem within the Anaheim Bay-Huntington Harbour complex, which includes the Seal Beach National Wildlife Refuge. The study focus includes (1) restoring and improving navigation channels and support features at Huntington Harbour; (2) improving safety and national security for the Seal Beach Naval Weapons Station; (3) restoring ecology at Huntington Harbour and surrounding areas, including the Seal Beach National Wildlife Refuge; and (4) improve water quality in the surrounding waters of the Anaheim Bay-Huntington Harbour complex.

As part of developing plans for the above purposes, the study would consider adjusting designs of project features to provide incidental benefits by (5) increasing storm damage protection to Surfside Colony, located adjacent to the existing south jetty of Anaheim Bay and (6) providing incidental storm damage protection along Seal Beach, located adjacent to the existing north jetty of Anaheim Bay. In response to the study authority, the reconnaissance study was initiated on 30 July 2003. The reconnaissance study has resulted in the finding that there is a Federal interest in continuing the study into the feasibility phase. The purpose of this Section 905(b) Analysis is to document the basis for this finding and establish the scope of the feasibility phase. As the document that establishes the scope of the feasibility study, the Section 905(b) Analysis is used as the chapter of the project management plan that presents the reconnaissance overview and formulation rationale.

Summary: Funds in the amount of $100,000 were appropriated in fiscal year (FY) 2003 to conduct the reconnaissance phase of the study, under the title, Huntington Harbour Dredging. The 905(b) Analysis was completed in November 2003 and approved by HQUSACE on 3 February 2004. The Anaheim Bay Second Entrance Channel study is being rolled into the Huntington Harbour study. The Navy has demonstrated strong interest in a 2nd entrance channel, and is currently undertaking a parallel path to design a modified ship basin in conjunction with a 2nd entrance channel. A modified ship basin will allow for larger class naval vessels and multiple smaller class vessels to dock at the Weapons Station.

Construction of a second entrance channel will result in reducing the Surfside-Sunset Renourishment frequency from once every 5 years to once every 15 years. This equates to a cost savings of $90 million over a 50-year period. Other benefits include: a) improve force protection at the Naval Weapons Station; b) allow the Weapons Station to reconfigure their ship basin to bring in larger class vessels and to remove the explosive arc from PCH; c) improve tidal circulation in the Wildlife Refuge; and, d) provide unrestricted boat access to Huntington Harbour.

FY05 funds were used to initiate the Project Management Plan and review.

Background Information: Huntington Harbour first opened its facilities in 1969. Prior to that the area was an undeveloped natural waterway adjacent to the huge wildlife area that is still untouched. The Harbour includes 64 acres that was surplus and given to the Harbour District by the Naval Weapons Station in Seal Beach for use as a public park for recreation purposes. At the time of purchase the property consisted of tidal marshlands that were completely covered by water at high tide. Additional acreage of about 31 acres consisting of State tidelands was also leased for the project. Channel design depth was –10 feet MLLW to provide adequate navigation depths. The material from dredging the channels and from additional deepening was used in the development of five islands. There are four local beach areas located within the Harbour.

Huntington Harbour includes Sunset Marina Park as well as 2 public marinas, Huntington Marina HOA and Peter’s Landing Marina. Sunset Marina Park includes a 276 slip marina and a public boat launch ramp with multiple lanes, boat, and trailer parking, car parking areas, a boat repair yard and public picnic areas. Most of the Harbour consists of privately held slips adjacent to residences. There are a total of about 3,000 boats in the Harbour. There are about 30 sport fishing or charter boats that operate from Huntington Harbour and one commercial diving boat. The City ‘s Marine Safety Division maintains 3 boats out of the Harbour. Entrance is through Anaheim Bay and between the Naval Weapons Station and Huntington Harbour and under the Pacific Coast Highway Bridge. Boats pass through the Seal Beach National Wildlife refuge.

Huntington Harbour is the closes mainland stopover point from Catalina Island. Boating includes sport fishing, private charters, boat rentals, and other recreation boating activities. The marina also offers complimentary two-hour guest slips for boaters who want to enjoy dining and shopping on the waterway’s boardwalk. Kayak enthusiasts frequent the Harbour to take advantage of the abundant wildlife and calm waters.

Future development within Huntington Harbour is expected to include a campground, wildlife observation areas, additional boat slips and boat storage areas. It is expected that sediments from surrounding watersheds will continue to cause shoaling of the channels and navigation facilities, resulting in greater restrictions of their use.

Sediment from surrounding watersheds is causing shoaling within Huntington Harbour navigation channels, and marina’s creating channel navigation restrictions, and impairing the use of launch ramps, and public and private boat slips. A Bathymetric Survey of Huntington Harbour in May 2000 estimates that approximately 34,000 cubic yards of silt needs to be dredged from 10 channels. The survey also shows that eelgrass was present at two of ten proposed dredging areas. The last dredging episodes conducted at Huntington Harbour were prior to 1988. However, it is noted that many of the channels, launch areas, and slips were dredged beyond –10 feet MLLW for fill material to create the islands. Consequently, sediment deposition has not reached elevations to cause any channel constrictions. However, it is likely that the deeper areas are now filling to a point where more and more shoaling problems may surface.

Surveys completed in 2000 show much of the sediment that shoals the navigation facilities originate from urbanized flood control channel, and other drainage outlets, such as the Wintersburg, Sunset (i.e. Hiel), and Edinger (i.e. Bolsa Chica) Flood Control Channels. There are insufficient diversion systems, sediment/silt traps or catch basin mechanisms to filter and remove silt and other trash and debris from these channels. This problem is exacerbated by erosion of the beaches within the Harbour. The City participates in sand replenishment programs to insure access to the public beaches. Due to tidal changes, the replenished sand ends up in the center of the channels.

The watershed that drains into Huntington Harbour is enormous and heavily urbanized. Once in the main channel, polluted water, sediments, trash and debris become trapped within Huntington Harbour, which lacks the tidal influences needed for circulation. Serious environmental problems affecting Huntington Harbour include impaired water quality, silt/sediment loading, and protected/invasive plant species. In June 2003, the Federal government added Huntington Harbour to its list of impaired water bodies after the Environmental Protection Agency (EPA) found unacceptable levels of polychlorinated biphenyls (PCBs) and dieldrin. Since much of the shoaling identified in 2000 was located near drainage outlets, there is concern that the silt buildup might be so contaminated with toxic metals, pesticides, and PCB’s that special dredging and other management measures will be required for disposal of the sediments.

Degradation of Ecosystem within Anaheim Bay-Huntington Harbour Complex. Drainage of the watersheds surrounding and emptying into the Anaheim Bay-Huntington Harbour complex contain poor water and sediment quality that is adversely impacting on the areas ecosystem, including the Seal Beach National Wildlife Refuge. According to the Santa Ana Regional Water Quality Control Board, current problems include metals and pesticides from urban runoff and non-point source pollutants. Tidewaters are also restricted from entering the inner bay by the 600 foot wide shipping channel connecting the outer and inner harbors and the constriction at the Pacific Coast Highway Bridge. Culverts and tide gates further restrict tidal flow into the wildlife refuge area, such that tidal action in the upper reaches of the marsh is muted.

Anaheim Bay was undisturbed until 1868 when a commercial pier was built at the Landings. In 1944, the U.S. Navy acquired 5,000 acres of Anaheim Bay and established the Seal Beach Naval Weapons Station, including construction of the protected bay entrance. Huntington Harbour was developed in the southern part of the bay in the 1960’s. In 1972, the Seal Beach National Wildlife Refuge was created within the borders of the Naval Weapons Station. The refuge

was established to protect the endangered California least tern, light-footed clapper rail, and to provide quality habitat for California brown pelican, peregrine falcon, and Belding’s savannah sparrow. The refuge provides critical stopover and winter habitat for migratory waterfowl, raptors, and shorebirds along the Pacific Flyway. The 920-acre refuge includes about 220 acres of open estuarine water, 566 acres of salt marsh, 151 acres of tidal and non-tidal estuarine flats, 2 acres of coastal brackish/freshwater marsh, and 17 acres of riparian willow and sycamore habitat. Upland areas include 303 acres of principally agricultural lands to the north and east and levees, and oil production sites.

The Seal Beach Naval Weapons Station and the U.S. Fish and Wildlife Service provide for the management of the refuge, and both have taken actions to preserve and improve on the refuge resources. As mitigation for construction of a 147 acre-landfill that was included in the Federal navigation project to deepen the Port of Long Beach, the Port of Long Beach restored about 116 acres of wetlands adjacent to the Seal Beach National Wildlife Refuge. Completed in 1990, the mitigation project restored four areas of uplands and former wetlands.

As indicated earlier, the Regional Water Quality Control Board has noted current problems with water and sediment quality that drain into the Anaheim Bay-Huntington Harbour Complex. If no action is taken to remove and control these contaminants, they will further degrade ecosystem quality within Huntington Harbour as well as having the potential to be carried further into pristine areas of the National Wildlife Refuge.

Restrictions to Boating Access to Huntington Harbour. The Seal Beach Naval Weapons Station enforces restrictions to boaters transiting through the Anaheim Bay entrance channel as part of their operations. The frequency and duration of these closures are dependent on the operation at the Naval Station. In general, the entrance is closed to traffic for approximately 20 minutes during transit of Navy vessels, and this occurs on the average of once a week, but often occurs on a daily basis during periods of high activity at the Weapons Station. The entrance is also closed for training and security reasons, which last on the average of a half-hour to an hour. The longest being four hours. Following 9/11, the entrance was closed to harbor traffic from late September through December. During this time, the entrance was completely closed for a period of two weeks, and then opened for a limited time in the morning and afternoon for fisherman to go in and out, with a Navy escort. In late December 2001, the entrance was reopened. Currently the entrance is open 24 hours, 7 days a week but is monitored by the Navy. The Orange County Sheriff Department estimates that the number of boats impacted by the closures ranges from about 5 boats a day on a light week day to more than 30 boats a day on a peak weekend.

Safety and Security at the Seal Beach Naval Weapons Station. The Seal Beach Naval Weapons Station’s concern with the safety and security of their operations began with the opening of the Huntington Harbour boating facilities. This interest in separating boating traffic from Naval operations via a second entrance channel was following the October 2000 small boat attack on the USS Cole in Yemen, and was reinforced following the catastrophic events of September 11, 2001.

The U.S. Navy completed construction of Anaheim Bay Harbor in 1944 and currently utilizes Anaheim Bay to transfer ordnance between naval ships and the U.S. Naval Weapons Station at Seal Beach. In 1973, the U.S. Navy commissioned the U.S. Army Corps of

Engineers to study the concept of expanding the Naval Weapons Station facility at Seal Beach to expand their operations and availability to other Navy vessels. The results of this study entailed a recommendation to construct an offshore breakwater and mooring, along with constructing a second entrance channel to Anaheim Bay between the East Jetty and Surfside Colony. Following completion of the study, the U.S. Navy opted to not go forward with the plan at that time, therefore the proposed plan was placed on hold. The Navy has considered the need for a 2nd entrance several times since the original study, but action to complete these studies and move forward with a project has been deferred.

Several meetings were held with Navy officials at the Seal Beach Naval Weapons Station. They have expressed interest in modifying the Weapons Station ship basin to accommodate larger class naval vessels, which would also require separating the Navy traffic from Huntington Harbour’s boating traffic. The benefits of the 2nd entrance also provide added and permanent security measures for the U.S. Naval Weapons Station, Seal Beach against possible sea based attacks to moored Naval combatants and munitions barges by foreign and domestic forces hostile to the people and government of the United States. A second entrance also provides public safety to recreational boaters and the surrounding communities by diverting small craft maritime traffic originating from Huntington Harbour away from the ordnance handling operations at the U.S. Naval Weapons Station, Seal Beach. The Navy is interested in Corps of Engineers involvement in the 2nd entrance channel since the Corps of Engineers historic mission includes constructing access and facilities for small craft harbors.

Coastal Storm Damage Problems along Surfside Colony. The jetties that were constructed to establish Anaheim Bay and the Seal Beach Naval Weapons Station in 1944 interfere with the movement of sand to the down coast beaches. Because of detrimental impacts to the down coast beaches, Congress authorized the U.S. Army Corps of Engineers, under the River and Harbor Act of 1962, to take corrective actions, in the form of constructing a series of down coast groins and implementation of a feeder beach along Surfside Colony. This project includes providing periodic beach nourishment through the feeder beach, which occurs on the average of every five years at a cost of over $10 million per

cycle. The feeder beach material experiences rapid erosion caused by waves and currents reflecting off the south jetty at Anaheim Bay. Consequently, the protective beach created by the feeder beach may be seriously reduced prior to the next nourishment cycle, resulting in backshore development being vulnerable to coastal storms. This has occurred many times over the last several decades, resulting in wave damage to the backshore residential development and causing Orange County and local residents to spend considerable funds in emergency protection measures. There is also concern that the cost of periodic nourishment will significantly increase in the future. As nearby sources of nourishment are depleted, material will be obtained from distant sources at much higher cost. A cost-shared feasibility study is underway with the City of Seal Beach to determine if measures can be taken to improve protection to Surfside Colony development. If a 2nd entrance channel study is approved, the combining of this study with the Huntington Harbour Study may be warranted.

Coastal Storm Damage Problems along the City of Seal Beach. The jetties that were constructed at Anaheim Bay also cause impacts to the up coast area along Seal Beach. The waves and currents reflecting off the north jetty cause erosion of material along the beach area immediately adjacent to the jetty. This continues to lead to narrowing of the protective beach and exposing backshore development to flooding during coastal storms. A Federal shore protection project was completed in the 1970’s by the Corps of Engineers and the City of Seal Beach. The project involved the construction of a groin and placement of beach material, with a requirement for the City of Seal Beach to place periodic nourishment on the beach, as needed.

The City has been trucking material that has moved up coast to the impacted area and has provided nourishment from other sources. However, erosion of this beach and exposure of the backshore development continues to be a problem

History: Prior Studies and Reports: Numerous reports concerning Anaheim Bay- Huntington Harbour were reviewed as part of this study.

1) “Huntington Harbour Bathymetric Survey Report.” Prepared by Tetra Tech, Inc. for the City of Huntington Beach, May 2000.
2) “Huntington Harbour Waterways Committee Summary Report.” Prepared by Ron Hagan, Special Projects Manager, August 2003.
3) ”Westminster Reconnaissance Study Section 905 (b) (WRDA) Analysis”, USACE, Los Angeles, June 2001
4) “California Wetlands Information System-Anaheim Bay” at web site ceres.ca.gov/wetlands/geo_info/so_cal/Anaheim.
5) Several preliminary studies have been initiated by the Navy, but not completed regarding the construction of a second entrance channel to Huntington Harbour.

Related Projects. The study includes investigating modifications to existing Federal projects as follows:

1) Surfside- Sunset to Newport Beach. The existing Federal shore protection project from the Surfside-Sunset to Newport Bay extends along 17 miles of the Orange County coast from Anaheim Bay down coast to the Newport Bay Harbor entrance. Ten stages of construction have been completed, including groins and beachfill to restore and maintain the shoreline down coast of Anaheim Bay. A feeder beach along Surfside Colony, adjacent to the southern jetty at the Anaheim Bay entrance, receives approximately 1.8 million cubic yards of sand every 5 years at a cost of about $10 million. Modifications that may be considered in the Huntington Harbour study relate to construction of new jetties to construct the second entrance channel. The design of these jetties could consider alignments or other adjustments to reduce wave action along Surfside Colony and to reduce the rapid erosion of the feeder beach material along Surfside Colony.

2) Anaheim Bay (City of Seal Beach). The existing Federal shore protection project for the City of Seal Beach included placement of beach fill and construction of one erosion control groin near Seal Beach Pier. Periodic nourishment is the responsibility of the City of Seal Beach. The Seal Beach area continues to experience erosion of the protective beach causing backshore development to be vulnerable to wave attack during coastal storms. The Huntington Harbour Study could consider modifications to the northern jetty to reduce strong rip currents that increase erosion of beach material as well as disposing some of the material dredged to create a 2nd entrance channel to restore the City of Seal Beach protective beaches.

Current Corps of Engineers Studies that may relate to the Huntington Harbour Study.

1) San Gabriel to Newport Shoreline Feasibility Study. A 905 (b) Analysis Report for the San Gabriel to Newport Bay Shoreline Reconnaissance was completed in February 2001. The report recommended a cost-shared feasibility study be undertaken to provide protection to the Surfside Colony area from coastal storm damage. HQUSACE approved the 905(b) Analysis report and recommendation in March 2001. The Feasibility Cost-Sharing Agreement was executed in September 2002. This study is examining several measures to reduce wave attack to backshore development along the Surfside Colony. These measures include modifying the existing south jetty to reduce rip currents that cause rapid erosion of the feeder beach that also provides protection to Surfside Colony. Other measures such as revetment,

offshore breakwaters, and groins are also being considered to provide protection. There is some potential that improvements found feasible for constructing a second entrance may also benefit protecting Surfside Colony. If it is found that proposed protective features are common to both projects, consideration will be given to combining the study efforts.

2) Westminister Flood Control and Watershed Feasibility Study. A 905 (b) Analysis Report examining the watersheds draining the City of Westminister and surrounding areas was completed by Los Angeles District and approved by Headquarters in July of 2001.

The report recommends proceeding with two independent comprehensive watershed management studies for Westminister (East Garden Grove) Flood Control and Watershed Study and a Watershed Study for the Carbon and Coyote Creek watersheds. Feasibility Study cost-sharing agreements were executed for these two studies in September 2003. These studies may result in measures to reduce flooding, restore ecosystem features, control sediment erosion and deposition, and improve water quality. The findings and recommendation of this study could include measures to reduce sediments and improve sediment and water quality that drain into Huntington Harbour and the Seal Beach National Wildlife Refuge. The study findings will be considered in the Huntington Harbour Study, as available and appropriate.

FAQs: N/A

Maps: N/A

Photos: Project Features

Stakeholders/Study Participants:

Local Sponsors. The primary non-Federal sponsor for the feasibility phase of the study is the State of California Department of Boating and Waterways. The local sponsor has expressed support for the study and understands the two-phase planning process and is willing to participate in 50-50 cost sharing of the feasibility phase study.

Congressional Interests. The study area lies within the jurisdiction of Congressional District 46, CA represented by Dana Rohrbacher. United States Senators representing California, Barbara Boxer and Diane Feinstein, are also interested in this study.

News Releases: N/A

News Articles:

Blasting caps found in Huntington Beach - Daily Breeze, Jan. 12, 2006 (322KB PDF)

Related Links: N/A

Technical Documents/Presentations:

Recon (905b) Report (1.00MB PDF)

Points of Contact:

Richard Leifield, P.E.,Project Manager
U.S. Army Corps of Engineer,
Los Angeles District
915 Wilshire Boulevard, (CESPL-PM-C)
Los Angeles, California 90017
richard.j.leifield@usace.army.mil
(213) 452-4008

Alex Hernandez, Study Manager/Planner
U.S. Army Corps of Engineers
Los Angeles District
915 Wilshire Boulevard, (CESPL-PD-C)

Los Angeles, California 90017
alejandro.hernandez@usace.army.mil
(213) 452-3835 – fax (213) 452-4204

Greg Fuderer, Public Affairs Specialist
U.S. Army Crops of Engineers
Los Angeles District
915 Wilshire Boulevard, (CESPL-PA)
Los Angeles, California 90017
gregory.a.fuderer@usace.army.mil
(213) 452-4209 – fax (213) 452-3923